

Appl. No. : 09/881,052
Filed : June 13, 2001

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

- 1-94. (Canceled)
95. (Currently amended) An apparatus for dispensing liquids into a reaction vessel, said apparatus comprising:
- a rotor mounted for rotation about a central axis, said rotor carrying an array of reaction vessels along a circular path;
 - a liquid dispenser comprising a plurality of dispensing nozzles, said liquid dispenser positioned above said rotor and arranged for dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured such that movement of the dispensing nozzles is minimized or eliminated; and
 - a controller for synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.
96. (Previously presented) The apparatus of claim 95 wherein said apparatus is configured for chemical synthesis and said liquid dispenser is fluidly coupled with one or more reagent sources.
97. (Previously presented) The apparatus of claim 96 wherein said apparatus is configured for synthesis of oligomers.
98. (Currently amended) The apparatus of claim 95 wherein each of said dispensing nozzles comprises a dispensing valve controlling liquid delivery thereto, wherein said controller is configured to simultaneously synchronize movement of said rotor and control of said ~~dispensing valves~~ dispensing valve.
99. (Currently amended) The apparatus of claim 98 wherein at least one of said ~~dispensing valves~~ dispensing valve comprises an electric solenoid valve.

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100. (Previously presented) The apparatus of claim 95 wherein said controller is configured to actuate said nozzles and dispense fluid while said rotor is moving along said circular path.

101. (Previously presented) The apparatus of claim 95 wherein said plurality of dispensing nozzles are linearly arranged in a pattern corresponding to a radial column of said array of reaction vessels.

102. (Previously presented) The apparatus of claim 95 wherein said liquid dispenser is a multi-channel dispenser.

103. (Currently amended) A method for dispensing liquids into a reaction vessel, said method comprising:

providing a rotor and a liquid dispenser, said rotor being mounted for rotation about a central axis and carrying an array of reaction vessels along a circular path, said liquid dispenser comprising a plurality of dispensing nozzles and being positioned above said rotor;

dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured such that movement of the dispensing nozzles is minimized or eliminated; and

synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.

104. (Previously presented) The method of claim 103 further comprising performing chemical synthesis in at least one of said reaction vessels.

105. (Previously presented) The method of claim 104 wherein said performing chemical synthesis comprises synthesis of oligomers.

106. (Currently amended) The method of claim 103 wherein each of said nozzles comprises a dispensing valve controlling liquid delivery thereto, wherein said synchronizing step further comprises controlling said ~~dispensing valves~~ dispensing valve.

107. (Currently amended) The method of claim 106 wherein at least one ~~of said dispensing valves~~ dispensing valve comprises an electric solenoid valve.

108. (Previously presented) The method of claim 103 further comprising simultaneously delivering different liquids to respective ones of said reaction vessels.

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109. (Previously presented) The method of claim 108 further comprising actuating said nozzles and dispensing fluid while said rotor is moving along said circular path.

110. (Withdrawn) An apparatus for dispensing liquids into a reaction vessel, said apparatus comprising:

a rotor mounted for rotation about a central axis, said rotor carrying an array of reaction vessels along a circular path;

a liquid dispenser comprising a plurality of dispensing nozzles, said liquid dispenser positioned above said rotor and arranged for dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured to be moveable solely along a linear path; and

a controller for synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.

111. (Withdrawn) The apparatus of claim 110 wherein said apparatus is configured for chemical synthesis and said liquid dispenser is fluidly coupled with one or more reagent sources.

112. (Withdrawn) The apparatus of claim 111 wherein said chemical synthesis is the synthesis of oligomers.

113. (Withdrawn) The apparatus of claim 110 wherein each of said dispensing nozzles comprises a dispensing valve controlling liquid delivery thereto, wherein said controller is configured to simultaneously synchronize movement of said rotor and control of said ~~dispensing valves~~ dispensing valve.

114. (Withdrawn) The apparatus of claim 113 wherein at least one ~~of said dispensing valves~~ dispensing valve comprises an electric solenoid valve.

115. (Withdrawn) The apparatus of claim 110 wherein said controller is configured to actuate said nozzles and dispense fluid while said rotor is moving along said circular path.

116. (Withdrawn) The apparatus of claim 110 wherein said plurality of dispensing nozzles are linearly arranged in a pattern corresponding to a radial column of said array of reaction vessels.

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117. (Withdrawn) The apparatus of claim 110 wherein said liquid dispenser is a multi-channel dispenser.

118. (Withdrawn) A method for dispensing liquids into a reaction vessel, said method comprising:

providing a rotor and a liquid dispenser, said rotor being mounted for rotation about a central axis and carrying an array of reaction vessels along a circular path, said liquid dispenser comprising a plurality of dispensing nozzles and being positioned above said rotor;

dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured to be moveable solely along a linear path; and

synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.

119. (Withdrawn) The method of claim 118 further comprising performing chemical synthesis in at least one of said reaction vessels.

120. (Withdrawn) The method of claim 119 wherein said performing chemical synthesis comprises synthesis of oligomers.

121. (Withdrawn) The method of claim 118 wherein each of said nozzles comprises a dispensing valve controlling liquid delivery thereto, wherein said synchronizing step further comprises controlling said ~~dispensing valves~~ dispensing valve.

122. (Withdrawn) The method of claim 121 wherein at least one of ~~said dispensing valves~~ dispensing valve comprises an electric solenoid valve.

123. (Withdrawn) The method of claim 118 further comprising simultaneously delivering different liquids to respective ones of said reaction vessels.

124. (Withdrawn) The method of claim 123 further comprising actuating said nozzles and dispensing fluid while said rotor is moving along said circular path.

125. (Currently amended) An apparatus for dispensing liquids into a reaction vessel, said apparatus comprising:

a rotor mounted for rotation about a central axis, said rotor carrying an array of reaction vessels along a circular path;

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a liquid dispenser comprising a plurality of dispensing nozzles, said liquid dispenser positioned above said rotor and arranged for dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured to be moveable solely along a linear path or are configured such that movement of the dispensing nozzles is minimized or eliminated; and

a controller for synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.

126. (Currently amended) A method for dispensing liquids into a reaction vessel, said method comprising:

providing a rotor and a liquid dispenser, said rotor being mounted for rotation about a central axis and carrying an array of reaction vessels along a circular path, said liquid dispenser comprising a plurality of dispensing nozzles and being positioned above said rotor;

dispensing a liquid from each dispensing nozzle into a reaction vessel while said array of reaction vessels moves along said circular path, wherein said dispensing nozzles are configured to be moveable solely along a linear path or are configured such that movement of the dispensing nozzles is minimized or eliminated; and

synchronizing movement of said rotor with the dispensing of the liquid such that said liquid dispenser dispenses the liquid into said array while said rotor is rotating.